ABSTRACT

Advanced technology in embedded chip architecture results in a low cost System-on-Chip (SoC) [1] which implants microcontroller, radio transceiver, and several sensors known as sensor node. A group of sensor nodes which formed a Wireless Sensor Network (WSN) offers a variety of surveillance applications which include habitat monitoring, smart health care system, building automation, and etc. All these applications are often critically constrained by sensor nodes' operating energy availability. This makes energy management one of the major challenges in designing such system. Although many approaches are being developed by the research community at all protocol layers, an energy-efficient Medium Access Control (MAC) layer remains a key design challenge.